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MeSH Database Single Citation Matcher Batch Citation Matcher Clinical Queries	Transactivator and structurally optimized inducible lentiviral vectors. Mol Ther. 2004 Sep;10(3):585-96. PMID: 15336658 [PubMed - in process]								
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	□ 5:	Ma HL, Whitte MJ, Collins M,	ers MJ, Konz Dunussi-Joa	RF, Senices N nnopoulos K.	M, Young DA,	<u>Grusby</u>	Relate	d Articles	s, Links
	IL-21 activates both innate and adaptive immunity to generate potent antitumor responses that require perforin but are independent of IFN-gamma. J Immunol. 2003 Jul 15;171(2):608-15. PMID: 12847225 [PubMed - indexed for MEDLINE]								
	□6:	Vacek MM, M	a H, Gemigna	ani F, Lacerra	G, Kafri T, Ko	ole R.	Relate	d Articles	s, Links
	High-level expression of hemoglobin A in human thalassemic eryt progenitor cells following lentiviral vector delivery of an antisense Blood. 2003 Jan 1;101(1):104-11. Epub 2002 Aug 15. PMID: 12393543 [PubMed - indexed for MEDLINE]								
	□7:	Xu K, Ma H, M	AcCown TJ, V	Verma IM, Ka	ıfri T.		Relate	d Articles	s, Links
		Generation of lentiviral vec Mol Ther. 200	ctors.	•	ducing high-	titer self	-inacti	vating	

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
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S2	19	hong near2 ma.in.	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON .	2005/07/07 14:15
S3	97	single near2 (LTR OR (long adj terminal adj repeat))	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/07/07 14:17
S4	1333	(rev adj responsive adj element) OR rre	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/07/07 14:16
S5	2	S3 same S4	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/07/07 14:17
S6	335	(one OR S3) near2 (LTR OR (long adj terminal adj repeat))	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/07/08 11:03
S7	7	S6 same S4	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/07/07 14:18
S8	27	inder near2 verma.in.	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/07/08 10:49
S9	1691	(one OR "1") near2 (LTR OR (long adj terminal adj repeat))	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/07/08 11:03
S10	1333	(rev adj responsive adj element) OR rre	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/07/08 11:04
S11	59	S9 same S10	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/07/08 11:41
S12	8193	(lentivir\$4 OR retrovir\$4) with (LTR OR (long adj terminal adj repeat))	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/07/08 11:43
S13	266	S12 same S10	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/07/08 12:02

S14	197664	(packaging adj signal) OR (psi)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/07/08 11:44
S15	241	S13 same S14	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/07/08 11:44
S16	262	polypurine adj tract	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/07/08 11:45
S17	4	S15 same S16	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/07/08 11:46
S18	13	S15 and S16	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/07/08 11:46
S19	226	S12 with S10	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/07/08 12:02
S20	216	S19 with S14	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/07/08 12:02









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	□5:	Bahi A, Boyer F,	Kafri T, D	reyer JL.			Relate	d Articles	s, Links
	CD81-induced behavioural changes during chronic cocaine administration: in vivo gene delivery with regulatable lentivirus. Eur J Neurosci. 2004 Mar;19(6):1621-33. PMID: 15066158 [PubMed - indexed for MEDLINE]								
	□6:	Cockrell AS, Kat	<u>fri T.</u>				Relate	d Articles	s, Links
•		HIV-1 vectors a way to go. Curr HIV Res. 20 PMID: 15049428	003 Oct;1(4):419-39. Rev	riew.	ther adva	ncemei	ıts, and	still
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            160 S SINGLE (W) (LTR OR (LONG TERMINAL REPEAT))
L2
           2243 S (REV RESPONSIVE ELEMENT) OR RRE
              1 S L1 (P) L2
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           4708 S (ONE OR 1) (W) (LTR OR (LONG TERMINAL REPEAT))
L5
               8 S L4 (P) L2
               5 DUP REM L5 (3 DUPLICATES REMOVED)
L6
          31631 S LTR OR (LONG TERMINAL REPEAT)
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           5183 S L7 (S) (LENTIVIR? OR RETROVIR?)
31 S L8 (P) L2
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L9
             15 DUP REM L9 (16 DUPLICATES REMOVED)
L10
L11
              49 S L8 AND SIN
              25 DUP REM L11 (24 DUPLICATES REMOVED)
L12
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IN Kafri, Tal; Ma, Hong
SO U.S. Pat. Appl. Publ., 23 pp.
CODEN: USXXCO

TI Single LTR lentivirus vector for generating high titer vector particles and optimized for functional genomics applications

The present invention provides lentivirus vectors comprising a single retroviral LTR, a polypurine tract, a packaging signal, a primer binding site and a rev responsive element. Further provided is a lentivirus vector comprising a heterologous nucleotide sequence, a single retroviral long terminal repeat (LTR), a packaging signal, a rev responsive element, a polypurine tract, a eukaryotic promoter, a primer binding site, a bacterial origin of replication and a bacterial selection marker. In addn., the present invention provides an isolated nucleic acid comprising a 5' retroviral LTR and a 3' retroviral LTR, a heterologous nucleotide sequence, a packaging signal, a rev responsive element, a polypurine tract, a eukaryotic promoter, a primer binding site, a bacterial origin of replication and a bacterial selection marker cassette, wherein the bacterial origin of replication and bacterial selection marker are located between the two LTRs. The invention provides Self Inactivating Vector (SIN) feature into the single-LTR based vector system including the development of a conditional-SIN vector, in which the parental U3 region contg. the HIV-1 enhancer/promoter sequence was replaced with a tetracycline-inducible promoter.

IN Kingsman, Alan John; Kingsman, Susan Mary

SO U.S. Pat. Appl. Publ., 21 pp., Cont.-in-part of U.S. Ser. No. 254832. CODEN: USXXCO

TI Lentiviral LTR-deleted vector for gene therapy targeted to neurons AB A vector capable of transducing non-dividing and/or slowly dividing cells is provided, wherein the vector is a lentiviral LTR-deleted vector. The invention overcomes the limit of regular HIV-based retroviral vectors, which relies on Tat activation through binding to promoter and TAR within HIV U3 region, by replacing HIV U3 region with murine lentiviral virus MLV U3 region or other desirable promoter (and enhancer) regions. Also provided is a method for producing a protein of interest in a non-dividing or slowly dividing cell by transducing the cell with a lentiviral LTR-deleted vector and expressing the protein of interest in the cell. addn., target cells contg. the lentiviral LTR-deleted vector are provided. The invention is exemplified by constructing lentiviral LTR-deleted vectors expressing a fusion protein contg. tyrosine hydroxylase (TH) and DOPA decarboxylase (DD) in either TH-DD or DD-TH order, which may be useful for treating Parkinson's disease. The chimeric gene was constructed from cDNAs isolated from a human brain substantia nigra cDNA library with a linker sequence encoding (Gly4-Ser)3. When inserted into a mammalian expression vector (pC1-neo) and used to transiently transfect 293T cells, the fusion gene expresses a fusion protein with dual enzymic activities. Retroviral vectors expressing the TH-DD gene in a single transcription unit configuration are either under control of MLV LTR U3 region or HIV1 LTR U3 promoter.

AU Olson P; Nelson S; Dornburg R SO Journal of virology, (1994 Nov) 68 (11) 7060-6. Journal code: 0113724. ISSN: 0022-538X.

- Improved self-inactivating retroviral vectors derived from spleen necrosis virus.
- Self-inactivating (SIN) retroviral vectors contain a AB deletion spanning most of the right long terminal repeat's (LTR's) U3 region. Reverse transcription copies this deletion to both LTRs. As a result, there is no transcription from the 5' LTR, preventing further replication. Many previously developed SIN vectors, however, had reduced titers or were genetically unstable. Earlier, we reported that certain SIN vectors derived from spleen necrosis virus (SNV) experienced reconstitution of the U3-deleted LTR at high frequencies. This reconstitution occurred on the DNA level and appeared to be dependent on defined vector sequences. To study this phenomenon in more detail, we developed an almost completely U3-free retroviral vector. The promoter and enhancer of the left LTR were replaced with those of the cytomegalovirus immediate-early genes. This promoter swap did not impair the level of transcription or alter its start site. Our data indicate that SNV contains a strong initiator which resembles that of human immunodeficiency virus. We show that the vectors replicate with efficiencies similar to those of vectors possessing two wild-type LTRs. U3-deleted vectors carrying the hygromycin B phosphotransferase gene did not observably undergo LTR reconstitution, even when replicated in helper cells containing SNV-LTR sequences. However, vectors carrying the neomycin resistance gene did undergo LTR reconstitution with the use of homologous helper cell LTR sequences as template. This supports our earlier finding that sequences within the neomycin resistance gene can trigger recombination.
- Hofmann A; Nolan G P; Blau H M AU
- Proceedings of the National Academy of Sciences of the United States of America, (1996 May 28) 93 (11) 5185-90. Journal code: 7505876. ISSN: 0027-8424.
- Rapid retroviral delivery of tetracycline-inducible genes in a single TI autoregulatory cassette.
- We describe a single autoregulatory cassette that allows reversible AB induction of transgene expression in response to tetracycline (tet). This cassette contains all of the necessary components previously described by others on two separate plasmids that are introduced sequentially over a period of months [Gossen, M. & Bujard, H. (1992) Proc. Natl. Acad. USA 89, 5547-5551]. The cassette is introduced using a retrovirus, allowing transfer into cell types that are difficult to transfect. Thus, populations of thousands of cells, rather than a few clones, can be isolated and characterized within weeks. To avoid potential interference of the strong retroviral long terminal repeat enhancer and promoter elements with the function of the tet-regulated cytomegalovirus minimal promoter, the vector is self-inactivating, eliminating transcription from the long terminal repeat after infection of target cells. Tandem tet operator sequences and the cytomegalovirus minimal promoter drive expression of a bicistronic mRNA, leading to transcription of the gene of interest (lacZ) and the internal ribosome entry site controlled transactivator (Tet repressor-VP16 fusion protein). In the absence of tet, there is a progressive increase in transactivator by means of an autoregulatory loop, whereas in the presence of tet, gene expression is prevented. Northern blot, biochemical, and single cell analyses have all shown that the construct yields low basal levels of gene expression and induction of one to two orders of magnitude. Thus, the current cassette of the retroviral construct (SIN-RetroTet vector) allows rapid delivery of inducible genes and should have broad applications to cultured cells, transgenic animals, and gene therapy.
- Hwang, Jung-Joo; Li, Ling; Anderson, W. French ΑU Journal of Virology (1997), 71(9), 7128-7131 CODEN: JOVIAM; ISSN: 0022-538X

A conditional self-inactivating retrovirus vector that uses a ΤI tetracycline-responsive expression system

The authors developed a novel conditional self-inactivating (C-SIN) vector, TL-SN, by replacement of the enhancer-promoter of the 3' long AB terminal repeat of Moloney murine leukemia virus with a synthetic tetracycline operator-cytomegalovirus promoter (tetP) from the tetracycline-responsive expression system (TRES). The other component of the TRES, a chimeric transactivator (tTA), was stably incorporated into

PA317 amphotropic packaging cells, thus generating the packaging cell line PA317-tTA. C-SIN amphotropic G418-resistant virus particles were generated with a titer of 2 .times. 105 CFU/mL within 2 days of transinfection of PA317-tTA cells with TL-SN ecotropic virus particles. This titer was approx. 2 log units higher than that obtained by transinfection of parental PA317 cells and was due to the high level of viral transcripts originating from the tetP promoter at the 5' end of the transduced vector in the presence of tTA. This C-SIN vector has the potential for use in human gene therapy since it incorporates the advantages of previous SIN vectors in having weak tetP promoter activity (in the absence of tTA in target cells) while at the same time achieving high viral titers with PA317-tTA packaging cells.

AU Jaggar R T; Chan H Y; Harris A L; Bicknell R

vector design are discussed.

- SO Human gene therapy, (1997 Dec 10) 8 (18) 2239-47. Journal code: 9008950. ISSN: 1043-0342.
- TI Endothelial cell-specific expression of tumor necrosis factor-alpha from the KDR or E-selectin promoters following retroviral delivery.
- AB The tumor vasculature offers a target for anti-cancer gene therapy which has the advantages both of good accessibility to systemically delivered therapy and comparative homogeneity across solid tumor types. We aimed to develop retroviruses carrying endothelial-specific promoters for the delivery of genes to proliferating endothelial cells in vitro and to tumor endothelial cells in vivo. This paper reports the generation of such retroviral vectors and the level of expression of murine tumor necrosis factor-alpha (mTNF-alpha) cDNA following infection into endothelial cells and stromal fibroblasts. Retroviral vectors carrying mTNF-alpha have been generated whose expression is controlled either by the retroviral long terminal repeat or by 5' proximal promoter sequences from the endothelial-specific kinase insert domain receptor (KDR)/VEGF receptor and E-Selectin promoters within the context of a self-inactivating (SIN) vector backbone. Both KDR and E-Selectin have been shown to be upregulated on tumor endothelium. A putative polyadenylation sequence AAATAAA within the E-Selectin promoter was mutated to permit faithful transmission of retroviral vectors carrying this promoter. We demonstrate a 10- to 11-fold increase in mTNF-alpha expression from promoter elements within sEND endothelioma cells as compared to NIH-3T3 fibroblasts. Suggestions for further improvements in